Which One Is Home?

Find What You Need...

- A pen or pencil

How can moving away from something help you see it?

How would you describe your hometown? Would that change if you could see your town from space? If an orbiting satellite took a photo, you might see features you couldn't see from the ground: the boundaries of the city, the shape of rivers and lakes, and the size of nearby hills, for example. Scientists use images taken by satellites and other spacecraft to study Earth and distant planets alike.

Images beamed back from deep space may be difficult to interpret. To help figure out what they're looking at, scientists compare photos of other planets with satellite images of Earth and its moon. An ice cap, riverbed, or crater on a distant planet might look similar to the same feature on Earth, for example.

Scientists use what they know about Earth to try to understand how similar features formed on another planet's surface. For example, common features may be caused by wind, water, earthquakes, volcanoes, or meteorite strikes. On Mars, scientists are interested in features that resemble dry streambeds. Do they mean that liquid water once flowed on Mars? The presence of water increases the chances of finding life on a planet.

In this activity, you'll see if you can tell Earth images from Mars shots, and then try to identify the features in each photo.

Fact:

Views of Mars through early telescopes showed straight lines on the planet's surface. Some people thought these were canals dug by Martians! It turned out that the straight lines were illusions - they disappeared when scientists developed better telescopes.

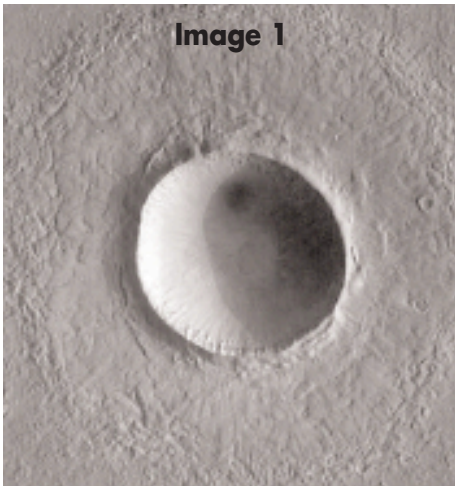
Activity Instructions

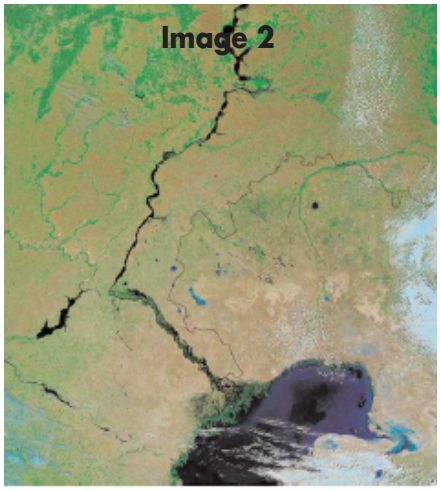
1. Print out the "Satellite Image Notes" lab sheet on page 2 of this activity.

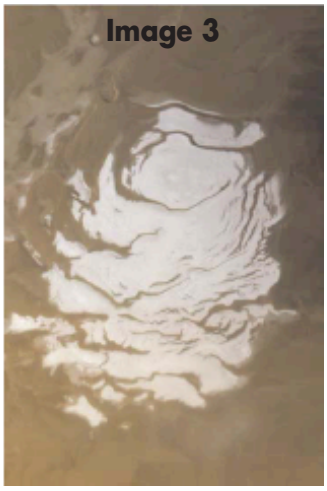
   Tip: You can print out this whole activity, but for better picture quality, we suggest opening this PDF on your computer and viewing the satellite images on your screen.

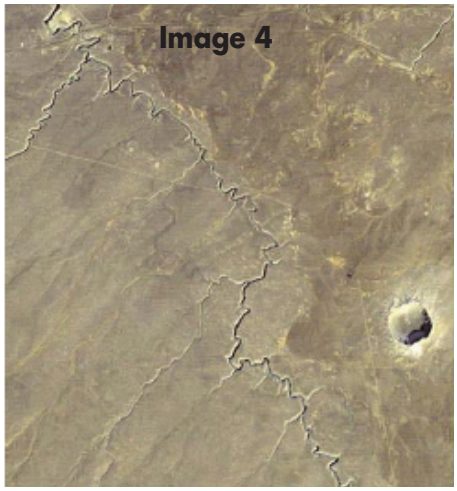
2. Study each image and record your observations on the lab sheet. Guess which planet the photo is from, describe the photos, identify the feature in each photo if you can, and look for similarities with other images.

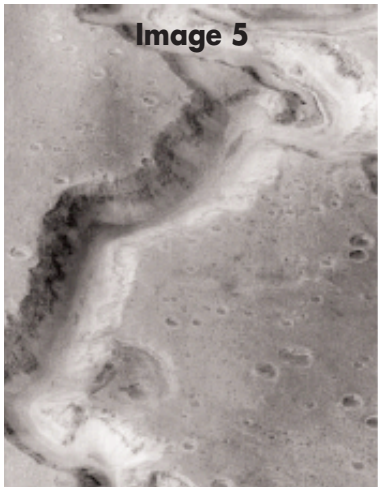
3. If you are doing this as a group, compare your answers with a friend's to see more interesting observations. Then check the answer key at the top of page 3 to find out what scientists know about these photos.











Satellite Image Notes

Image Number	Earth or Mars?	Description, and what this feature might be: city, river, lake, etc.	Is this similar to another image? Which one?	What might have caused the feature to form?
Image 1				
Image 2				
Image 3				
Image 4				
Image 5				
Image 6				

Answer Key: Which One Is Home?

Image 1: Crater on Mars. This hole formed when a meteor slammed into Mars.

Image 2: Volga River in Russia. It is the longest river in Europe. It flows into the Caspian Sea.

Image 3: Mars' South Polar Cap. On Mars, the South Pole is covered in frozen carbon dioxide. Some scientists believe there's also frozen water under the surface.

Image 4: Meteor Crater, in Arizona. It was formed about 50,000 years ago when a meteorite hit Earth. The crater is about 1,300 km (.8 miles) across.

Image 5: A canyon called Nanedi Vallis on Mars. Scientists think it formed from a combination of two things: Flowing water that slowly cut through the ground, and a collapse of Mars' surface.

Image 6: The Grand Canyon, in Arizona. It was formed by the Colorado river, slowly cutting through layers of rock. Scientists think the canyon is between 5 and 6 million years old.

Brain Blaster:

Satellite images of Earth can help to predict weather, check the health of forests or oceans, record changes to Earth after an earthquake, and more. Can you think of other uses for photos from space?

Kids' Science Challenge Science Projects are presented by the award-winning radio series, Pulse of the Planet

Made possible by the National Science Foundation